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ABSTRACT

This summary of Council for Educational Technology (CET) activities begins with a definition of educational technology and a brief statement on its importance in the learning process. Activities, including involvement in both CET and cooperative projects, are then briefly described in 16 areas: (1) instructional technology (IT) in the curriculum; (2) the technology, including hardware, software, artificial intelligence, operating systems, file interchange, software distribution, and online databases; (3) communications, including electronic mail and bulletin boards; (4) videotex, including Prestel, Viewdata, and telesoftware; (5) teleconferencing; (6) broadcasting and satellite technology; (7) interactive video; (8) IT and microelectronics for children with special needs and students with learning difficulties; (9) IT in administration and management of schools; (10) IT and learning information skills; (11) IT and links with libraries; (12) IT and training; (13) open learning; (14) international links; (15) standards and specifications; and (16) copyright. Sources of additional information are indicated for a number of the projects and a list of CET publications providing information on the potential and applications of some of the technologies mentioned is appended. (BBM)

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Information Sheet 2

CET and IT in education and training

Introduction

The Council takes a broad view of educational technology, believing it to be a rational problem-solving approach to education and training, based on the systematic application of the growing body of knowledge about the learning process. Contributing to this approach, and affecting all aspects of life, is the development of information and communications technology. IT can enhance the learning process in many ways, contributing to:

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information handling - the storage and retrieval of information

information communication - the transmission and reception of information

information generation and transformation - the creation and manipulation of information

The power of information technology is in the use of all three elements: not only utilising the microcomputer and its peripherals, but telecommunications, broadcasting, video, radio and television and other audiovisual media which are facets of information technology. The word 'information' is used in this context to describe all forms of messages that need to be conveyed whether textual, numeric, pictorial, graphic, vocal or instrumental.

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IT can assist in:

- identifying learning needs
- extending methods of learning
- offering more flexible learning styles
- widening opportunities for creativity
- increasing the scope of resources available.

All CET's development projects contain an element of information technology, and there follows a description of those currently underway.

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IT in the Curriculum — a future plan

CET is in the processes of establishing a Council Development Group, with its first meeting to be held in July 1986, to examine and report on the wide range of issues associated with planning for the future needs of schools within the UK in relation to microelectronics and microcomputing across the curriculum. The Group will be drawn from various organisations whose remits cover the whole spectrum of school education. It is expected that the Group will prepare for the Council a major consultative document offering recommendations so that advice and/or guidance can be given to government, local education authorities and national educational agencies as appropriate. It will also advise the Council on the need for and procedures for the establishment of long term arrangements for keeping these issues under continuous review.

For further details contact Chris Humphries at CET.

The Technology

HARDWARE

Most of CET's work involving the use of microcomputers is focussed on the particular micros supported by the Department of Trade and Industry, as part of its Micros in Schools initiative. These are the BBC Model B, and Research Machines Ltd 380Z and 480Z. However other micros are used when required, and in-house we have three Apple MACs and a couple of RML Nimbus', as well as Torch Computer facilities via BBC Model B's.

SOFTWARE

The major work in this area was carried out in England, Wales and Northern Ireland by MEP up till March 1986. Now the Microelectronics Support Unit (MESU) will provide the support to LEA's and teacher training instutions in the task of integrating and developing the use of new technology in schools. Mr John Foster has now been appointed Director, and MESU will be based at Warwick University. There is no further information available at present.

In Scotland, the Scottish Council for Education Technology (SCET) supports developments in this area, including research, and has a considerable library of programs.

For further information contact:

Dennis Daly
Assistant Director
SCET
Dowanhill
74 Victoria Crescent Road
Glasgow G12 9JN
Tel (041) 334 9314

Artificial Intelligence

CET has already been involved in some areas of AI for a few years but, with the outcomes of the Alvey Programme which have served to heighten awareness and stimulate thinking of applications in other areas, it is now timely for CET to play a somewhat fuller role in AI as a whole. The value of AI in education and training is currently being explored in the primary and secondary curriculum, further education and industry/business. This is, however, only a start and it is likely that over the next few years CET's involvement in AI will extend further into the whole of education and training.

For further details contact Judith Christian-Carter at CET.

Information Technology Users Standards Association (ITUSA) Action Group - UNIX

This action group has just been formed to assess the potential of UNIX as a standard operating system for business, industry, education and training over the next five to ten years.

In education the use, at all levels, of a number of different microcomputers, minis and main frames involving a number of operating systems has given rise not only to incompatibility and portability problems but also to the difficulty of transferring skills gained on one hardware/software configuration to another. Where an objective of learning concerns the transferability of skills this situation is clearly undesirable.

The Action Group is investigating UNIX as well as alternatives. It will assess the existing provision in relation to the needs of users and then make a recommendation with the possibility of producing an International Standard for "X" as a common operating system.

While at the moment UNIX, or similar operating systems, are not suitable for many micros found in education, particularly at primary and secondary level; with developments in the computer hardware industry over the next five years or so it is expected that super-micros capable of running UNIX-type operating systems will be more commonplace.

For further details contact Judith Christian-Carter at CET.

File Interchange Format

To make it possible for any particular collection of data to be used with a variety of database packages, and on a number of different micros, CET has developed and published the Draft File Interchange Format (FIF). This is a technical document, and it is intended for those who have a knowledge of databases and communication techniques. It provides information and guidance on the recommended data structure to be used as an interchange format when moving data. A second draft is being prepared which will include a section on spreadsheets. The document will be reviewed in 1987.

For further details contact Susan Sheahan at CET.

Software Distribution Study

Following the conclusion of the CET telesoftware project, a study to investigate the whole range of software distribution methods was carried out. The findings of this survey are published by the Council as 'The Distribution of Microcomputer Software to Education: a Report', by L A Gilbert.

DATABASES

National Educational Resources Information Service (NERIS)

During 1985 CET carried out a feasibility study for the Department of Trade and Industry, on the potential for a database of curriculum resource information. This report outlined a detailed strategy for the development of such a service, and at present NERIS is being established using these recommendations.

For further information contact:

David Taylor
National Educational Resources
Information Service
Maryland College
Leighton Street
Woburn MK17 9JD
Tel (0525) 25364

County Links Access to Information about Resources and Expertise (CLAIRE)

CET has been helping to fund project CLAIRE which is a computerised information retrieval scheme being run in Bedfordshire, Buckinghamshire, Cambridgeshire, Hertfordshire, Norfolk and Suffolk. It has produced a database of information that can be searched by keywords under places, people, organisations and locally produced material.

For further details contact:

Mike Blakey
Russell House
14 Dunstable Street
Ampthill
Bedfordshire
Tel (0525) 405220

The DES Survey of Research and Development in the Application of Information Technology in Education

CET was funded by the DES to carry out a survey on funded research and development work about the benefits and limitations of using information technology to support teaching and learning. Information on some 200 projects was collected from 1985/6, and this information is currently held as a database at CET. For further details, or for a search of the database, contact Judith Morris at CET.

Online Databases

The CET Information Team has experience of using several of the major online database services including BLAISE, ERIC, IRS-ESA and WORLD REPORTER. Anyone who would like advice on the usefulness of these services may contact Jim Ayre at CET.

Communications

CET's main contribution in this area has been through the work of the Videotex Unit, and also the development project PACNET which looked at the potential of audioconferencing as a delivery mechanism in education and training. These two projects reflect CET's diverse interest and work in communications. In the very near future it will be possible to send data, voice, graphics, pictures down the same cable extremely quickly with virtually no corruption or loss of strength. This technology will have considerably more potential than present systems and it must be explored so that education and training can benefit accordingly. At the same time hardware and software at the terminal end will develop in its sophistication and ease of use. Getting easy access to a remote host computer housing an extensive database will become an everyday activity. Developments in broadcasting cannot be overlooked either. Short range transmitters will allow local broadcasting to flourish and the services offered by such firms as Datacast and Air Call Teletext will extend the use of teletext even further. As more of these heterogeneous services become networked together so their value to education and training will increase.

Electronic Mail

CET is keen to promote the sending of messages and text via electronic mail systems where appropriate. Communications between schools using Prestel Mailbox is encouraged and with the more widespread use of modems, the educational advantages of international as well as national communications links are being explored.

Bulletin Boards

These continue to appear and disappear, some almost overnight, and they still have the image as a means of communication for the computer freak who wants to talk to other like-minded freaks. However, there are now a number of Boards which do show the user the potential of such an information source. ITecs have made extensive use of Bulletin Boards, the MSC runs its own Board, Northamptonshire has its own viewdata system as well as those Boards which, although set up for users of a particular microcomputer, give a lot of up-to-date information and downloadable software. Many of these Boards are run on operating systems which have been around for quite a while but they do the job. Many larger databases can also be regarded as Bulletin Boards, BT Gold and TINS being good examples. CET is not only a user of many Bulletin Boards but also advises and monitors developments in this area.

For further details on communications contact Judith Christian-Carter at CET.

Videotex

Teletext and viewdata are both videotex systems. Whilst CET is interested in exploring the potential of all aspects of videotex, and has representatives on management groups for systems such as The Times Network for Schools, work to date has mainly focussed on the use of British Telecom's public viewdata system, PRESTEL and on microviewdata.

CET has always been concerned to develop the use of viewdata within education as an additional facility available via the school's microcomputer rather than through standard commercial viewdata terminals. The Council therefore designed and commercially distributed the first viewdata terminal package for a microcomputer. It enables the Research Machine 380Z to act as a viewdata terminal via a standard British Telecom approved modem. This package allows normal access and use of viewdata systems plus the ability to save frames onto disc, make hard copy of frames via the micro's printer and download computer programs via Telesoftware. In addition, the package includes a local viewdata system (microviewdata) that enables users to create and edit their own databases in viewdata format. Packages for most other popular micros have now been developed by various companies, and CET continues to encourage these developments.

CET has been active as an educational information provider on Prestel for over five years. The role of the Council's Videotex Unit is to develop educational viewdata based information and support services and to provide an opportunity for other education and training organisations to publish information on the system.

See CET Information Sheet No 10 Videotex.

PRESTEL EDUCATION

Launched in January 1985, development of Prestel Education was a joint venture between CET and Prestel to provide a comprehensive service to educational viewdata users. Prestel Education is now run by Prestel as a public subscription service. Starting on page 888, the Education Service carries specialized information on areas of interest to all educationalists. It provides some information itself and provides links to a range of other databases, each concerned in some way with education.

Prestel Education provides specialist services:

A-Z Indexes
These are three specialist A-Zs for education users. An A-Z of educational organisations who publish on Prestel; an A-Z of education information covering 75 broad headings; and an A-Z of educational users with mailbox numbers for electronic mail.

Courses Guides
Using Gateways to the Open University's computers, two databanks are available. One, ECCTIS (Educational Counselling and Credit Transfer Information Service), giving details of all Advanced Further and Higher Education (AFHE) courses in the UK. The second, PICKUP, (Professional, Industrial and Commercial Updating Programme), is the national directory of short courses.

The SIGNPOST Careers Guide
Based on popular 'Signposts' material already available in schools, this service is provided by the Careers and Occupations Information Service (COIC). Details of some 300 popular job types will be available and updated as necessary. COIC also lists their publications and materials that teachers can order, and provides a news service for careers specialists.

The SCHOOL LINK magazine
The electronic section to the popular monthly Educational Computing. Provided by the same journalists who compile the printed magazine, SCHOOL LINK carries news and information about all education microcomputing matters, details and reviews of software for popular micros and a 'person to person' electronic communications section.

Telesoftware
(The Education Telesoftware Service uses the CET format to provide computer programs via telesoftware.) Educational programs are available for the BBC and RML 380Z and 480Z and can be found on Prestel page 880. Other programs can be found under the Prestel Microcomputing section.

Curriculum Matters
Launched in June 1986 this section was developed by CET to follow its earlier work with the Curriculum Index. Aimed at teachers it provides guides and starting points for considering Prestel's uses in the curriculum, both in subject and non-curriculum developments.

CET PRESTEL EDUCATIONAL UMBRELLA SERVICE

Through the Prestel Educational Umbrella Service on page 211, CET provides the opportunity for other education and training organisations to publish information on the system. CET currently represents over 160 individual education and training organisations and the range and depth of information is constantly being extended. The service also aims to improve the scope, quality and presentation of the information available to education services. The service can also offer Microviewdata exhibition discs which can display viewdata pages offline on a microcomputer. These discs can be used for publicity, or developed as course materials giving students a opportunity to experience accessing microcomputer-based information systems.

For further information about Prestel Education or CET Educational Umbrella Service contact:

CET Videotex Unit
1st Floor
261-265 Gray's Inn Rd
London WC1X 8QT Tel 01-837 0436.

VIEWDATA TRAINING

New technologies are enlarging the repertoire of educational resources and progressively enhancing traditional educational and training methods throughout the curriculum. Recognising this, CET is concerned to support the user, not only with advice and guidance on equipment and appropriate software, but equally with information and training materials in the use and application of information and communications technologies.

CET has produced two packages of materials in the introduction and use of viewdata:

i) **Prestel and Microviewdata in Education: a training course** by Jean Beck and Jane Burton. £25.00 1985

These materials, developed jointly by CET and MEP Capital Region are intended to present the applications and possibilities of viewdata to students and staff as well as to teach essential information skills. They cover topics such as an introduction to Prestel and microviewdata, the structure of hierarchical databases, information handling and the presentation and design of viewdata pages. The course is divided into 8 modules which can be run over two or three days or as a series of evening sessions.

ii) **Start Up and User Guides** by Jane Burton and Jo Taylor. £35.00 1985

Start Up Guide - A brief guide to using Prestel and microviewdata in conjunction with the manuals provided for the equipment and software being used. A flip book with diagrams and space for notes.

User Guide - A comprehensive set of materials to help in the management and creative use of Prestel and microviewdata within a curriculum context. Eight removable sections in a wallet which also contains the disc.

Disc of Viewdata Examples - Demonstration of four different kinds of databases including learning about, and how to search Prestel off-line. No other software required to run it. Available for BBC model B, RML 380Z and 480Z.

Workshops

One-day workshops on creating viewdata databases are being run jointly by CET's Training Programme and the Videotex Unit. They run from July 1986 to March 1987 and are being held at various venues throughout the UK.

For further details contact Lesley MacDonald at CET.

ABTA CBT PROJECT (Association of British Travel Agents - Computer Based Training)

CET received funding to undertake a one year project (beginning 1 September 1985) to produce viewdata-based training materials for the travel industry. This is one element in a three-part initiative sponsored by MSC and coordinated by CNJ Systems Ltd. The Open University undertook a feasibility study into the possible uses of interactive video in the travel industry and staff from the ABTA National Training Board were trained by CET in viewdata editing techniques. CET's project was based in Liverpool, and undertaken by a small project team headed by Kevin Donovan and in close collaboration with selected travel agents. It resulted in a training database on Prestel with accompanying workbooks and interactive microviewdata training software developed by ITM Ltd for the Council.

For further information contact Jane Burton at CET.

TELESOFTWARE

Telesoftware is the term used to describe the transmission of programs or data from one computer to another via broadcast radio or television, or via telephone lines. Programs are obtainable via telesoftware on viewdata systems e.g. Prestel (using the telephone), and on teletext systems e.g. BBC Ceefax (via broadcast signals).

Most Prestel terminal packages or viewdata adapters (available for most computers) allow users to access the wide range of computer programs available on Prestel. These can then be used as soon as they have been downloaded into your microcomputer or stored on disc for future use.

The Acorn teletext adapter allows the same facilities when accessing programs via page 700 on the BBC Ceefax service. Some of the library of programs on this service are aimed specifically at education. Channel 4's Teletext Service "4-TEL" includes a percentage of educational programs, using the channel's own adapter.

CET, being concerned that the user might be faced with the problem of incompatibility in the receipt of telesoftware, wrote protocols ('the CET format') to govern the technical process of transmitting programs via viewdata and this is now the defacto standard for present development.

Updating and monitoring adherence to the format is now the responsibility of a small committee of representatives from CET, Prestel and Micronet 800. A booklet outlining these protocols, "Format Recommendations for Prestel Telesoftware (June 1986) is available free of charge from CET.

CET Telesoftware Project

With financial support from the Department of Industry, CET set up a two-year trial in September 1981.

The purpose of the project was to investigate the potential of telesoftware for the distribution of educational computer programs via Prestel. Twenty institutions throughout the UK were supported in the trial through a significant contribution to all operating costs, the provision of software packages and modems. A library of 150 programs was made available on Prestel. During the last months of the trial the Micronet 800 commercial telesoftware service was also launched and membership of this service was provided free to all participating institutions. The project concluded in August 1983 and CET published a detailed report of the trial, 'Distribution of Educational Software through Prestel' by C Knowles & P Bell.

Teleconferencing

PACNET

The Plymouth Audioconferencing Network Project was the most comprehensive survey of educational audioconferencing as yet undertaken in the UK. Sited in Plymouth Polytechnic, it was funded by CET, MSC, Plymouth Polytechnic and British Telecom and ran from February 1984 to March 1986.

PACNET's aims at the outset were to disseminate the concept of meeting by telephone, to offer a service which made such meetings possible, and to investigate the educational potential of these meetings. To this end, over three hundred meetings which met the needs of an extremely varied group of users were scheduled. These meetings were used for both teaching and administrative purposes in a variety of ways.

PACNET users for the most part, were pleased with the savings on time and travel, impressed by the efficiency of the medium and convinced that telephone meetings were a useful augmentation to traditional meetings. However, not all applications were suitable for telephone meetings. Those demanding a high level of visual input, for example, or involving complex mathematical equations need a development in audiographics to meet their needs fully.

The formal evaluation of the Project highlighted a number of issues that lead to the conclusion that it would be inappropriate to continue PACNET in its current form at this time. Firstly, developments in audioconferencing bridge technology are leading to the availability of bridge facilities at low cost on standard different PABX systems, and therefore primary usage in the future will probably be through local bridges under direct tutor control. Secondly, a national system with significant human support operates at a high cost level. Thirdly, practitioners do not appear to be ready yet to incorporate audioconferencing into their general education and training practices. Finally, the technical quality of the public telephone network is still insufficiently developed to provide the quality of service that audioconferencing demands.

Nonetheless, the work of the Project is regarded as having been both significant and positive in exploring the ways in which audioconferencing can contribute to education and training. The use of all types of communications technology including audioconferencing will certainly become more prevalent within education and training over the coming years and the work of the PACNET Project will prove to have been invaluable.

Dissemination of the Project's work is underway and includes Guidelines for first time users, a CET Working Paper and three videos.

For further information see Information Sheet No 7 Teleconferencing or contact Jane Burton at CET.

Broadcasting

Satellite Technology

There is currently much discussion surrounding the use of satellites in education and training. The narrow view of satellites as being only of use when it comes to meteorology and live broadcasts of events from other countries is now changing. The projected launch of Olympus in 1987/88 with a payload of free educational use has generated a lot of enthusiasm and ideas. CET is surveying the scene and is in contact with some key people with a view to making its own contribution in this area.

For further details contact Judith Christian-Carter at CET.

Interactive Video

The Technology

Interactive video is achieved by the linking of microcomputers to videoplayers, thus the video program is controlled by computer software. The convergence of computer and video-recording technologies has now reached a stage where it is possible by computer control of a video player to obtain sufficient random access to recorded sequences to utilize these as active components of an individualized learning scheme. Moreover, videodisc technology offers the freedom to present high-quality moving and still pictures in rapid random-access, or in slow motion, with great flexibility, under computer-guided sequencing.

Interactive Video Project

Having watched experimental activities in the United States over the last few years, and with videodisc technology now available in this country, CET commissioned a timely study (sponsored by the Department of Industry and Refiffusion Computers Limited) into the implications of interactive video for education. The purpose of the study was to investigate the nature of interactive video, the resources required to produce effective materials, suitable applications in education and training, and how appropriate materials might be achieved. 'Interactive Video: Implications for Education and Training' by John Duke is the report that resulted from that study.

National Interactive Video Centre

In late 1984, with financial support from the Department of Trade and Industry, the Manpower Services Commission, Philips and Thorn EMI, CET established the National Interactive Video Centre. This centre acts as a focal point of activity in interactive video. In addition to a showroom for interactive video hardware and software, the centre assists in the development of Interactive Video by encouraging the existence of user forums. It provides an information service, a range of case studies, and a register of current research in Interactive Video. A range of workshops and seminars are offered, in addition to demonstrations, aimed at teachers and trainers in commerce and industry. The Centre has produced a booklet - 'An Introduction to Interactive Video', (revised April 1986), which outlines current applications, concepts, systems, authoring languages and briefly discusses programme development and costs.

In addition the Centre has published 'Interactive Video Case Studies & Directory' by Claire Bayard-White. The case studies cover a range of applications and budgets. They have been produced by interviewing training departments from five widely different organizations - British Airways, British Steel, The Local Government Training Board, Henley Distance Learning Ltd and British Telecom. The book also incorporates a directory of nearly 200 IV projects.

For further information, or to visit the Centre, contact:

Claire Bayard-White
Information Officer
National Interactive Video Centre
27 Marylebone Road
London NW1 5JS
Tel 01-935 8190

Interactive Video in Schools Project

This project was set up in October 1985 with funds from the Department of Trade and Industry and is scheduled to run until March 1988. Its aim is to produce a range of interactive video packages in various subject areas for use across the curriculum at both primary and secondary level and then to investigate their suitability as a learning resource. There are eight

individual projects based at different locations throughout the UK. These projects are due to be installed and implemented in January 1987 and the results of an investigation into their suitability as a resource, in terms of their curriculum suitability in school, classroom management, and cost and production issues will be published in late Spring 1988.

For further details contact:

Bill Plummer
Interactive Video in Schools Project
NIVC
27 Marylebone Road
London NW1 5JS
Tel 01-935 5488

IT and Special Needs

Microelectronics and Children with Special Educational Needs

The work of MEP in the area of special education/needs is being continued by MESU. MEP has worked to promote the effective use of microcomputers with children with special needs, and to influence current practice through curriculum development projects and teacher training courses. Four Special Education Microelectronics Resource Centres (SEMERCS) have been set up in Newcastle, Bristol, Manchester and Redbridge. A series of information leaflets are available.

For further information contact Mary Hope, MESU National Coordinator for Special Education, at CET.

Students with Learning Difficulties

With joint funding from the EEC Social Fund, MEP and LEAs, CET is managing a two year project to explore the uses of information technology for students with moderate learning difficulties. In ten colleges around the UK the contribution of information technology will be tested and evaluated within the framework of the existing curriculum. The project started in August 1985 and runs until August 1987. It is coordinated by:

Peter Fowler
285 Buxton Rd
Macclesfield
Cheshire SK11 7ET
Tel 0625 20051

For further details contact Mary Hope at CET or Peter Fowler.

IT in Administration and Management

Information Technology in the Administration and Management of Schools

A joint CET/NFER proposal which envisages a 2 year programme of research and developmental activities has recently been submitted to the Department of Education. The proposal concentrates on:

1. enabling Local Education Authorities regularly to receive up-to-date information about what other education authorities are doing with information technology and administration.

2. helping to develop materials and/or strategies for raising awarenes about the potential of IT in educational administration at all levels.

For further information contact Jenny Monaco at CET.

IT and Learning Information Skills

Implications of Information Technology for the Learning of Information Skills (ITLIS)

In January 1984, the Council began an 18 month investigation (supported by the British Library and the Inner London Education Authority, focusing mainly on primary and secondary schools in the United Kingdom), into the steps being taken to enable learners to acquire the skills needed to exploit the range of currently available sources of information. The project came to an end in June 1985.

Two complementary activities were carried out during this period. The investigation looked at how various forms of IT were being used to help develop information skills in schools, and tried to come to some understanding of the relationship between print and IT sources of information in terms of the skills needed to exploit them fully. Research findings will be published by the British Library in September 1986, in the Library and Information Research Report series as 'Learning Information Technology Skills' by Carolyn Carter and Jenny Monaco. (LIR 54).

The developmental activity concentrated on producing case-studies of schools where pupils were using IT in a variety of information skills activities. Illustrative teaching and learning material and ideas for using the studies in staff development programmes and training workshops were also produced. Publication details to be announced.

For further information contact Jenny Monaco at CET.

Links with Libraries

CET has always maintained close contacts with the library world - both educational and otherwise. The Council is represented on the programme committees and the audiovisual groups of the Library Association, the Aslib Committee, and several British Library discussion groups and working parties. It is also currently involved in the establishment of a National Archival Collection of Non-Book Materials with the BL Bibliographic Services Division, and representatives from collections such as the National Film and Sound Archives.

For further information contact Helen Morris at CET.

IT and Training

CET's Training Programme is responsible for the development of a wide variety of materials to support teachers and trainers in the use of new technologies. Such recent publications include 'Never Mind the Technology - Think of the Information!', a study guide to enable teachers and others to acquaint themselves with potential uses of IT in education, and 'The Management of IT in Further Education' (MITFE), a collection of decision aids and checklists to help institutional decision-makers with the introduction and management of IT. A guide to the theory and practice of electronic databases is also in preparation.

In addition to overseeing the production of these materials, the Training Programme sets up workshops to demonstrate and disseminate their use, also drawing on the expertise and experience of other CET projects. This year has seen a series of successful 'MITFE' workshops, run by CET or offered as a package to LEAs and instutions. Workshops on creating viewdatabases are run in conjunction with staff from the Videotex Unit. Further and Higher education colleges may also be interested in a range of workshops concerned with training needs analysis for small businesses. These workshops are based on The Business Analyst self assessment package that was produced by the CET Open Learning Unit and are being supported by the Manpower Services Commission Adult Training Campaign, the Department of Employment and the DES PICKUP programme.

With the Further Education Unit (FEU) and the Audio-Visual Communication and Educational Technology (AVCET) section of National Association of Teachers in Further and Higher Education (NATFHE), the Training Programme is mounting a major conference on New Learning Opportunities in December 1986.

For further details contact Clive Neville at CET.

Open Learning

Open Learning Unit

The CET Open Learning Unit at Southampton and with it its work on OTTSU, Learning Links, Business Analyst etc came to an end on 31 March 1986. The new role of the unit is not yet clear but it is unlikely to be linked directly with Open Learning. The only link with the past will be the production of the journal "OLS News" now sold at £7.50 p.a. for four issues.

For information about the CET Southampton Office, or to order OLS News contact:

John Coffey
CET Southampton Office
Suite 3
48a The Avenue
Southampton SO1 2SY
Tel (0703) 39226

The Business Analyst

This self-assessment package is a new approach to business planning whereby it helps users to identify the strengths and weaknesses of their firm and to establish priorities for action. The package is for sale from McGraw-Hill and training workshops to support its use are being run by CET Training Programme.

Learning Links

The four centres that were set up under this project to provide information on learning opportunities and to encourage adults to make informed choices about participating in learning activities are now continuing with local funding.

For further information on the Medway Centre contact:

Moira Henderson
Learning Links
Adult Education Centre
Green Street
Gillingham
Kent
Tel (0634) 53429

Supported-Self Study

The third phase of this project began in March 1985, and will end in December 1986. Its main aim is to promote the implementation of supported self-study in secondary education by providing advice and consultancy to education authorities and by supporting staff development programmes and experiments in the use of information technology in supported self-study schemes.

The project is actually supporting an IT initiative in Gwynedd Local Education Authority, where an audioconferencing bridge is being used as part of a scheme to develop a supported self-study programme in a number of subject areas.

For further information contact the Project coordinator:

Philip Waterhouse,
8 Copse Road
Keynsham
Bristol BS18 1TH
Tel (02217) 2037

International Links

CET has links with many educational and training organisations overseas. Representatives of many of these visit CET when they are in London. Project work emanating from the many EEC committees on which representatives of CET sit is as follows:

New Information Technologies in Schools

Starting in June 1986, this is initially a year's project to reinforce the links between the various organisations and institutions involved in the introduction of new information technology into school systems throughout the European Community. It will be based in London, in the CET offices for the first few months. The Project Administrator will be Bill Broderick, formerly Adviser for Computing Services with the London Borough of Havering, supported by Jan Wright, CET.

FAST: TWG3

CET is coordinating network 3 (Visions and Scenarios) of the EEC study on the longer term impact of the new technologies on teachers and teacher trainers. This work is part of the Forecasting & Assessment in Science & Technology (FAST) programme, and there are 3 networks of experts looking at various aspects of the relationships between the new technologies and teaching.

The first network (working from Paris) will consider the effects on teaching methods, and the second, (also coordinated by the French), will explore demographic trends and their implications for the teaching profession. The task of the third network is to determine, as far as possible, how the new technologies will affect society generally and therefore to predict the education and training system which will be required to support that society. Overall the three networks should be able to give a convincing picture of what it will be like to be a teacher or trainer in the year 2000 and so to suggest what changes in training we should instigate now.

For further details contact Clive Neville at CET.

EUROTECNET

This is an exercise to create a European Network of projects concerned with all aspects of training in new information technologies.

It was established by the European Commission to encourage the transfer of experience and promising innovations between member states. CET has been involved in the setting up of the network in the United Kingdom and arranging a conference for the nine UK projects in March 1986.

The network of demonstration projects has been designed to highlight the potential of promising new approaches in different Member States with the view to improving the capacity of the training system to meet the new challenges arising from technological change and industrial innovation. Seventy one projects have joined in the network including work on computer aided engineering, modular training in new techniques of office skills, training mechanical engineering design draughtsmen, robotics, women in technology, remote working for the handicapped, embedded computer based training schemes, and many others.

EUROTECNET is coordinated from the European Centre for Work and Society at Maastricht, which has also produced a compendium of information about each of the projects represented in the network.

A major conference bringing together representatives from all the projects will be held in London in November 1986.

For further information contact:

John Coffey
CET Southampton Office
Suite 3
48a The Avenue
Southampton SO1 2SY
Tel (0703) 39226

DELTA

Developing European Learning through Technical Advance (DELTA) is a programme in the process of being set up under the auspices of the Information Technology and Telecommunication Task Force. CET is representated on an advisory panel concerned with the technical requirements 'dedicated learner station' for use in the school environment.

For further information contact Chris Humphries at CET.

Standards and Specifications

The Standards and Specifications activity provides guidance on new systems available to education and training as well as on the less technological of the many teaching and learning aids on the market. The activity is

monitored by a Management Team consisting of specialists in the field who advise the Council on how educational users can best be provided with guidance on the selection and operation of audio-visual and microelectronic equipment. The Technical Assessment Co-operative, who prepare information on individual items of equipment, also advise the Management Team on the needs of users through their day-to-day contact with them in providing support for and guidance on equipment.

User Specifications (USPECs) are published which provide guidance for selection and operation of equipment and in some cases pecifications for its performance. Technical Assessment Reports are also published and these show how individual items of equipment match the specifications laid down in the USPECs. Both publications are available free of charge from CET.

For further information contact Susan Sheahan at CET.

Copyright

The application of copyright law to information technology raises a number of issues and difficulties of interpretation. The recent amendment to the copyright act 1956 means that computer programs are now protected and that loading material into a computer may require the permission of the copyright owner.

A leaflet on copyright, including that related to computers, and additional advice may be had from Geoff Crabb at CET.

Conclusion

Further information about the potential and applications of some of the technologies mentioned in this leaflet can be found in the CET publications, listed in the following pages. If no CET contact is named by a particular project or activity about which you would like to know more, the Council's Information Team is always willing to answer enquiries about CET's work and, where detailed information and/or help is required, to try to provide appropriate referrals. Contact Jill Coates, Jim Ayre, or Judith Morris.

CET Publications

This is a selection of the Council's more recent publications mainly related to its work on the educational applications of information technology. For full details of all CET publications see the Council's publications leaflet.

CET WILL SEND AN INVOICE FOR THE COST OF YOUR BOOK(S) PLUS POSTAGE AND PACKING. PLEASE DO NOT SEND MONEY WITH THIS ORDER.

Bufton, N (editor), Exploring mathematics with microcomputers, MEP Readers 8, 1986. £10.00 .....

Burton, J and Beck, J, PRESTEL & Microviewdata in Education: educational viewdata training course, 1985. £25.00 .....

Burton, J and Taylor, J, Educational viewdata start-up & user guide 2 vols + disc, 1985. £35.00 (State BBC, RML 380Z or 480Z disc required). .....

Donovan, K, Management of Information Technology in Further Education, 1986. £7.50 .....

Duke, J, Interactive Video: implications for education and training, 1983. £10.00 .....

Gibson, D (editor), Wordprocessing and the Electronic Office. MEP Readers 2, 1983. £10.00 .....

Gilbert, L A, The Distribution of Microcomputer Software for Education: a Report, 1985. £7.50 .....

Gilman, J A, Information Technology and the School Library Resource Centre, 1983. £12.00 .....

Hope, M (editor), The Magic of the Micro: a resource for children with learning difficulties, MEP Readers 7. £8.00 .....

Kania, H, PRESTEL for People, 1983. £8.00 .....

Knowles, C & Bell, P, Distribution of Educational Software through PRESTEL, 1984. £7.00 .....

Ross, A, Making Connections: developing the primary school curriculum using a microcomputer for information retrieval. MEP Case study 5, 1984. £6.00 .....

Smith, C (editor), Exploring Biology with Microcomputers. MEP Readers 4, 1985. £10.00 .....

Stewart, J (editor), Exploring Primary Science & Technology with Microcomputers. MEP Readers 5, 1985. £7.00 .....

Thompson, V (editor), Education and social action programming for cable, 1984. £5.00 .....

Thompson, V, Brown, M and Knowles, C, Videotex in Education: a new technology briefing, 1982. £3.00 .....

Wace, G, Never Mind the Technology - Think of the Information! 1986. £4.50 .....

Wilkes, J (editor), Exploring History with Microcomputers MEP Readers 6. £10.00 .....

Free Publications

Information Technology in Initial Teacher Training by David Hawkridge, 1984. .....

USPEC 26: Modems and Acoustic Couplers, 1985. .....

USPEC 32A: A Guide to the Selection of Printers for Microcomputers, 1982. .....

USPEC 32B: Word Processing Systems in Education, 1982. .....

USPEC 32C: A Guide to the Use of Microcomputers for real-time applications in control/monitoring systems, 1984. .....

USPEC 32D: Videotex Systems in education, 1984. .....

USPEC 32E: Local Area Networks, 1985. .....

USPEC Information Sheet No 1: Compact audio discs, 1985 .....

CET Information Sheet No 1: Microcomputers in Schools, 1986 .....

CET Information Sheet No 6: Copyright, 1985. .....

CET Information Sheet No 7: Teleconferencing, 1985. .....

CET Information Sheet No 9: IT in Educational Administration & Management, 1985. .....

CET Information Sheet No 10: Videotex, 1985. .....

CET Information Sheet No 11: an Introduction to Information Technology in Training & Education, 1986. .....

CET Information Sheet No 12: Supported Self Study, 1986. .....

CET/MEP Information Sheets Nos 1-6: on Microelectronics and Children with Special Educational Needs. .....

CET News. Published 3 times a year. .....

Courses Leading to Qualifications in Educational Technology 1986-7. .....

Database Guidelines 1: Draft File Interchange Format Guidelines, 1985. (N.B. this is a highly technical document) .....

Format recommendations for Prestel telesoftware CET, June 1986. .....

CET publications leaflet (most recent issue). .....

This information sheet was produced by Jane Burton and Judith Morris and wordprocessed by Nicola Taylor.

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